A SURVEY OF MILK CONSUMPTION IN 59 CITIES IN THE UNITED STATES

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Summary

Under the direction of the Consumers' Counsel Division of the Agricultural Adjustment Administration and with the assistance of cooperating organizations a survey was made of the purchases of whole and evaporated milk by families in 59 cities of the United States during a single week of April or May 1934. The following essential facts were determined from returns tabulated for a total of 28,966 families or for certain groups thereof:

1. The weekly per capita consumption of whole milk and the whole-milk equivalent of evaporated milk reported for the entire sample of 28,966 families was 2.44 quarts; the average of 2.44 quarts does not include other forms in which milk was consumed, such as skim and dried milk, buttermilk, ice cream, or cheese.

2. According to nutritionists, a satisfactory allowance for the average-sized family, based on population figures, is between 3 to 5 quarts a person each week, the nearer the approach to the latter quantity the better. The average consumption of 2.44 quarts reported for families in the present study was 18.7 percent below the 3-quart level and 50.1 percent below the 5-quart level.

3. In only 8 out of the 59 cities was the average per capita consumption of whole and evaporated milk 3 quarts or more per week. In 9 cities the consumption was less than 2 quarts per person. Less than 2 quarts per person also was reported for more than two-thirds of the entire number of families surveyed.

4. The per capita consumption of whole and evaporated milk in southern cities was lower than in northern cities and, with the exception of New England, it was lower in eastern than in western cities. The proportion of total consumption in the form of evaporated milk was higher in the western and southern cities.

5. The proportion of the total consumed as evaporated milk tended to increase as total consumption per capita decreased.

6. A larger average number of persons and larger number of children per family were reported for families consuming relatively low amounts of milk. The explanation lies mainly in the fact that large families were commonly those of small average income.

7. Families for which relatively low per capita consumption of milk was reported, generally speaking, were those averaging smaller income, smaller expenditures for food and a greater proportion of the total income spent for food than in the case of families for which the per capita consumption of milk was comparatively high. This relationship between milk consumption and income was observed for practically all 59 cities.

8. The foregoing relationships existed also for families of any given size or income class; that is, within each size group the greater the per capita milk consumption the greater was the family income, and within each income class the greater the per capita milk consumption the smaller was the size of the family.

9. The evidence indicates that, by and large, milk was not regarded by the reporting families as an absolute necessity in the diet, which would be consumed regardless of income or number of persons for whom that income must buy food. The consistency with which this was in evidence for each of the 59 cities seems to negative the possibility that the observed variations in milk consumption could be attributed chiefly to variations in race, nationality, or climate.

A Survey of Milk Consumption in 59 Cities in the United States

Introduction

During 1933 and 1934 Federal and State emergency relief agencies reported a large increase in the number of cases of malnutrition among children. These were especially numerous in families with curtailed incomes where consumption of milk at the same time was found to be very low. In the absence of adequate statistics on the per capita consumption of milk, a committee headed by Mrs. Edward P. Costigan and composed of members of 12 national women's organizations [1] requested the Secretary of Agriculture to conduct a survey, the results of which would serve as a guide for the inauguration of a program for more adequate health protection for those classes of the population affected by deficient milk diet. Although the organizations were mainly interested in the consumers' side of this problem, it was anticipated that information would be developed also with respect to potential markets for milk products. Secretary of Agriculture, Henry A. Wallace, acted on the request by designating the Consumers' Counsel Division of the Agricultural Adjustment Administration as the agency responsible for the survey.

Sources of Data

The study was limited to representative groups of families in each of 59 cities. These cities were so selected that those of both large and small size were included, with an equitable geographic distribution for the entire country.[2] Local committees from participating women's organizations supervised the distribution, collection, and preliminary editing of the questionnaires. Final tabulation of all data was made in the office of the Consumers' Counsel Division, Washington, D. C.

In the interest of securing representative reports, the following plan was adopted: (1) Local authorities were requested to select one school located in a poor or slum district, a second in an industrial area, and still a third in a middle-class or well-to-do section of the city; (2) the committees were asked to distribute 250 questionnaires in each school, but in practice there was necessarily some variation

[1] See appendix A. 16 other organizations participated.
[2] See table 11, appendix C.

above and below this number; (3) the principal was asked to select 250 children at random and to give each child a questionnaire, to be filled out by the parents and returned to the school without signature or other family identification. Except in Detroit, where the survey included 196 families without children,[3] data were obtained for the most part on families having children in school.

The schedule called for a brief report of pertinent facts bearing upon family milk consumption during a single week in April or May 1934.[4] Data were requested on family income, amount of money spent for food, number of people in the family, the age of each individual, and the respective quantities of whole milk, evaporated milk,[5] butter and cream purchased. In addition, the request was made that amounts of milk and butter acquired other than by purchase be stated. No summary was made of the replies on butter and cream consumption.

While this is the first publication of the national and regional data, many of the figures for individual cities already have been published in the form of press releases issued by the Consumers' Counsel Division in 1934. These releases stated for each of the 59 cities the average daily purchases of all milk, average percentage consumed as whole milk, average size of family surveyed, average number of children per family, and the average weekly income per family.[6]

Limitations of Data

Estimates on the basis of the experience of a single week in April or May 1934 present special difficulties with respect to income and milk consumption. Whereas April and May are not characterized by undue seasonal fluctuations in purchases of milk or in factory employment,[7] wage earners in slum and industrial districts generally obtain sporadic employment, hence uncertain and unsteady income. This factor must, of course, be reflected to some extent in milk purchases and consumption.

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[3] A few reports covering families without children were received from other cities but the number of such families was less than 1 percent of the aggregate.

[4] See appendix B.

[5] In the process of editing the replies for tabulation, evaporated milk purchases were converted into quarts of milk equivalent in nutritive content, according to the standard of the Bureau of Home Economics, as follows: "17 ounces of evaporated milk is the equivalent of 1 quart of fluid whole milk. Number of large cans of evaporated milk purchased is multiplied by 14.5 ounces; number of small cans of evaporated milk purchased is multiplied by 6 ounces; in each case the product is divided by 17 to arrive at the fluid milk equivalent." Stiebeling, H. K., and Ward, M. M., Diets at Four Levels of Nutritive Content and Costs, U. S. Department of Agriculture, Circular No. 296, November 1933.

[6] Discrepancies between press releases and the present publication may be attributed to the exclusion from this report of 519 families whose own cows furnished them with their milk supply.

[7] Federal Reserve Bulletin, June 1934. Indexes of seasonal variations in factory employment covering the years 1919 through 1933 have shown that whereas April is slightly above the average for the year, May is slightly below, by about the same percentage.

Other limitations to the quality of the data arise from the nature of the schedules. Replies as to the amounts of milk purchased or otherwise obtained, as requested, undoubtedly fail to some extent to reflect fully the consumption habits of the reporting families. As a practical statistical proposition, however, the reports of housewives concerning purchases probably were more accurate than those which could have been ventured about actual amounts consumed.

The omission from the schedule of a question pertaining specifically to buttermilk and skim milk places further limitations on the usefulness of the data, although it is possible that many families included purchases of these products in stating the "quarts of milk purchased last week", as requested by the schedule. In southern cities the consumption of both skim milk and buttermilk is large. Comparison of the per capita consumption determined from these schedules, especially those from southern cities, with the diets described by the Bureau of Home Economics must be made, therefore, with some reservations. Such diets comprehend substitutes for fluid milk in the form of evaporated milk, fluid or dried skim milk, dried whole milk, ice cream, and cheese.[8] Since the consumption of only one of these substitutes is reflected in the summaries obtainable from the survey, underconsumption of milk as compared with the dietary standard is doubtless exaggerated to some extent in the data acquired.

No provision was made in the family schedules for milk purchased and consumed outside of the home. The greatest proportion of this item is probably to be found in the milk consumed at schools. Some judgment of a possible downward bias in the results arising from this circumstance is provided, however, by data on all pupils enrolled in the public school systems of 45 of the 59 cities surveyed. It was ascertained that the per capita consumption at school for this special group was 0.15 of a quart per week. Although the data received on questionnaires returned by school superintendents are not strictly comparable with those based on the family questionnaires, it is probable that 0.15 of a quart is the maximum amount to be added to the per capita consumption figures in this report to allow for consumption of milk at school.

The questionnaire did not provide for information regarding the nationality and race of individuals, although these factors might be expected to have an important bearing upon milk-consumption habits. Three colored schools only were included. This small number of colored schools, while not distorting the picture as a whole, allows one to gather no adequate idea of milk consumption among colored families.

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[8] "The following are approximately equivalent to the food value of 1 quart of fluid whole milk: 17 ounces of evaporated milk, or 1 quart of fluid skim milk and 1½ ounces of butter; or 5 ounces of American Cheddar cheese; or 4½ ounces of dried whole milk; or 3½ ounces of dried skim milk and 1½ ounces of butter." Stiebeling, H. K., and Ward, M. M., op. cit. p. 2.

No attempt has been made to measure or correct for a tendency on the part of consumers to overstate their consumption, a bias which has been found to exist in other consumption studies.

The method of sampling also places some limitation on the interpretation of the results, for it does not attempt to provide an adequate representation of all families in each of the cities covered. While it was intended that families be surveyed from the very low income group to the middle-class and upper-class register, it is not at all certain that this intent was carried out entirely. The local committee in some cases adhered strictly to the classifications originally set forth, yet this may have resulted in overemphasizing the lower income brackets, since the slum and industrial groups are much alike. On the other hand, the instructions were sometimes disregarded and districts representing the same economic status were chosen, with the result that families in extreme poverty were eliminated. Even if the three income classes were represented consistently in each city, the method of selection precluded the possibility of their reflecting actual income distribution for the whole city.

The foregoing considerations suggest the need for caution in drawing conclusions from the survey in terms of specific figures or precise averages. There can be no doubt, however, of the validity of the broad conclusions that have been set forth at the beginning of this report. These are based upon relationships which repeat themselves from city to city and within families of a given size and within families of a given income class. While the average per capita consumption may be understated for southern cities where buttermilk is an important item of the diet, nevertheless it is not open to doubt that the evidence establishes a grave deficiency in the average amount of milk consumed per capita in a large number of families.

Averages for All Reporting Families

Returns suitable for tabulation were received from 28,966 families. Data were secured on the number of persons constituting each family, the number of children of school age (5 to 16 years), the number of children under 5 years of age, purchases of whole and evaporated milk, and the amount of whole and evaporated milk obtained other than by purchase. Included in this aggregate of 28,966 families was a group of 19,427 families for which incomes during the scheduled week were reported. The entire number and this group were considered separately in preparing the tables for the present report. A subgroup of the 19,427 families (income group), consisting of 9,728 families, each containing just two adults, with children ranging in number from 0 to 10, also was given separate treatment in summariz-

ing the results. Table 1 presents the averages for each of the three arrangements on each item of information reported.

TABLE 1.—*Comparison of family groups by size, income, and milk consumption* [1]

Item	Average for 28,966 families; total number surveyed	Averages for families whose incomes were reported	
		19,427 families [2]	9,728 families with 2 adults
Persons in family—number	5.40	5.38	4.64
Children in family—do	2.66	2.61	2.64
5 to 16 years of age—do	2.25	2.21	----------
Under 5 years of age—do	.41	.40	----------
Weekly income of—			
Family—dollars	----------	24.18	23.66
1 person—do	----------	4.49	5.10
Weekly consumption [3] per person of—			
Whole milk—quarts	2.05	2.06	2.29
Evaporated milk—do	.39	.38	.39
Whole and evaporated milk—do	2.44	2.44	2.68
Proportion of whole and evaporated milk consumed as evaporated milk—percent	15.79	15.94	14.86

[1] All figures are stated as of a single week in either April or May 1934.
[2] Out of the entire sample of 28,966 families, data on income were received for 19,427 families. Included in the latter were 9,728 families with 2 adults.
[3] Computed by dividing total consumption of each family by the number of persons in that family, adding the resulting averages, and dividing the sum by the total number of families involved. This procedure was followed because of certain mechanical limitations on the handling of the basic data. Tests made on about ⅓ of the reports indicate that the per capita figures in the table approximate closely per capita figures secured by dividing total consumption by the total number of persons.

The group of 19,427 families for which average weekly income was ascertained compares very closely in all respects with the aggregate of 28,966 families. The weekly per capita consumption of whole milk and of evaporated milk is almost identical for the two cases, consequently there is close similarity with respect to the ratio of evaporated milk consumption to the consumption of whole and evaporated milk. The averages are also about the same in the two instances for the number of persons per family and the number of children in various age classes.

The averages for the income subgroup of 9,728 families (selected on the basis of 2 adults per family) deviate somewhat from the averages for both the income group of 19,427 families and the aggregate of 28,966 families. Whereas the consumption of whole and evaporated milk is 2.44 quarts per week for all reporting families and for the group of 19,427 families alike, for the subgroup it is 2.68 quarts. The larger consumption in the latter case obviously is associated with the fact that children constitute a larger proportion of the total number of persons in the families (2.64 children per family of 4.64 persons as against 2.6 children per family of 5.38 persons for the group of 19,427 families, and 2.66 children per family of 5.40 persons for the aggregate of 28,966 families).

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The average weekly income of $23.66 per family for the subgroup of 9,728 families is 52 cents less than the average for the group of 19,427 families. From the standpoint of income per person, however, the subgroup is higher with $5.10, as compared with $4.49. The importance of evaporated milk is definitely less for the 9,728 families than for the 19,427 families, in which adults comprise a larger proportion of persons in the family and where income per person is somewhat smaller.

The average consumption of whole and evaporated milk, amounting to 2.44 quarts per person per week (all reporting families), may be compared, but with some reservations, to the consumption recommended by nutritionists. The Bureau of Home Economics has computed the quantities of each of 12 classes of foods which it describes as affording a balanced diet at each of 4 levels of nutritive content and cost.[9] Table 1 from that report with its footnotes is reprinted here as table 2.

TABLE 2.—*Four diets: Approximate yearly quantities* [1] *of various foods or groups of food needed per capita for the population of the United States*

Item	Restricted diet for emergency use	Adequate diet at minimum cost	Adequate diet at moderate cost	Liberal diet
Flour, cereals ---------- pounds	240	224	160	100
Milk, or its equivalent [2] ---------- quarts	155	260	305	305
Potatoes, sweetpotatoes ---------- pounds	165	165	165	155
Dried beans, peas, nuts ---------- do	30	30	20	7
Tomatoes, citrus fruits ---------- do	50	50	90	110
Leafy, green, and yellow vegetables ---------- do	40	80	100	135
Dried fruits ---------- do	10	20	25	20
Other vegetables, fruits ---------- do	40	85	210	325
Fats (including butter, oils, bacon, salt pork) ---------- do	45	49	52	52
Sugars ---------- do	50	43	60	60
Lean meat,[3] poultry, fish ---------- do	30	60	100	165
Eggs ---------- dozen	8	15	15	30

[1] The figures given in this table are computed from diets adapted to the needs of individuals of different age, sex, and activity group and from the number of persons in each group as shown by the 1930 census of population. The quantities are those which should be delivered to the family kitchen. To convert them into production figures, suitable margins must be added to the different food groups to cover the unavoidable losses in harvesting, grading, storage, manufacture, or distribution.

[2] The following are approximately equivalent to the food value of 1 quart of fluid whole milk; 17 ounces of evaporated milk; or 1 quart of fluid skim milk and 1½ ounces of butter; or 5 ounces of American Cheddar cheese; or 4½ ounces of dried whole milk; or 3½ ounces of dried skim milk and 1½ ounces of butter.

[3] Retail cuts.

SOURCE: Stiebeling, H. K., and Ward, M. M., Diets at Four Levels of Nutritive Content and Cost, Circular No. 296, U. S. Department of Agriculture, November 1933.

Converted to terms of weekly per capita consumption, the milk figures contained in table 2 become approximately as follows: Restricted diet, 3.0 quarts per week; adequate diet at minimum cost, 5.0 quarts per week. The average of 2.44 quarts reported for the 28,966 families is 18.7 percent below the minimum standard suggested for the restricted diet for emergency use, provided other foods are in the right balance, and is less than half the figure recom-

[9] Stiebeling, H. K., and Ward, M. M., op. cit.

mended in the adequate diet at minimum cost. It has already been noted, however, that the figure of 2.44 quarts probably does not intentionally include consumption of buttermilk and skim milk, although some consumption of these products may have been reported; also it probably does not include any milk consumed by children at school, but the addition of that item would not greatly change the average results; and it does not make allowance, as in the recommended diets, for the equivalent of whole milk in skim milk and butter or in cheese.

Averages by Cities and Geographic Divisions

One of the most significant indications provided by the survey is that the consumption of milk by families is disappointingly low. Wide variations exist, of course, in the reported averages for the different cities and geographic divisions. Numerous gradations between high and low consumption are revealed, but the data throughout suggest that milk is not occupying a place in the diet of the American family commensurate with its nutritional and health-protecting qualities.

The nearest approach to 3 quarts per person per week, provided for in the restricted diet described in table 2, is found in the averages for the seven cities in the West North Central States and the five cities in the Pacific States, which averages are 2.71 quarts and 2.75 quarts, respectively (table 3). It may be true, however, that unreported consumption in the form of skim milk or as cheese, if known, would bring the averages for these two geographic divisions up to, or even slightly above, the restricted diet level. This possibility is supported by data given by Wells and Elliott [10] who, for the period 1931–33, estimate the annual per capita consumption of cheese at 4.4 pounds. In terms of weekly per capita consumption this quantity is 0.08 of a pound.

Higher per capita consumption of milk in the western and northern sections of the country than in the southern is also indicated by table 3.[11] In this comparison the Pacific and Mountain divisions stand first and third, respectively, with the West North Central and New England divisions second and fourth. The average for each of

[10] Wells, Oris V., and Elliott, F. F., Consumption and Foreign Trade as Related to Agricultural Adjustment. Unpublished Manuscript, Program Planning Division, Agricultural Adjustment Administration, June 1935.

[11] In table 3 the divisions are roughly arranged according to three broad groups: (1) 4 Eastern divisions which lead in per capita consumption of whole and evaporated milk combined, (2) 2 Western divisions with high per capita consumption of both whole milk and evaporated milk, and (3) 3 Southern divisions with low per capita consumption of whole milk but high per capita consumption of evaporated milk.

these four divisions is above 2.44 quarts, the average for all cities combined. In the consumption of whole milk alone the West North Central and New England divisions rank first and second, while the Pacific and Mountain divisions follow in third and fourth places. On this basis the three southern divisions (West South Central, East South Central, and South Atlantic) are seventh, eighth, and ninth in order.[12] It should be noted, however, that with respect to whole and evaporated milk combined the West South Central is in sixth place, displacing the Middle Atlantic division.

TABLE 3.—*Per capita consumption of whole and evaporated milk by 28,966 families, by geographic divisions*

Geographic division	Cities	Families	Weekly per capita consumption			Ratio of evaporated milk to whole and evaporated milk
			Whole and evaporated milk	Whole milk	Evaporated milk	
		Number	*Quarts*	*Quarts*	*Quart*	*Percent*
West North Central	7	3,642	2.71	2.45	0.26	9.3
New England	11	4,462	2.66	2.37	.29	11.1
East North Central	7	3,984	2.38	2.00	.38	15.9
Middle Atlantic	3	1,777	2.27	1.94	.33	14.3
Pacific	5	2,619	2.75	2.28	.47	16.9
Mountain	8	3,686	2.67	2.07	.60	22.7
West South Central	5	2,623	2.33	1.90	.43	18.2
East South Central	4	1,822	2.04	1.74	.30	15.0
South Atlantic	9	4,351	1.93	1.54	.39	20.2
Total	59	28,966				
Average			2.44	2.05	.39	15.8

Average quantities consumed per capita are shown by individual cities in table 11 (appendix C). In only eight cases[13] are 3 quarts per week exceeded. This occurs for two cities in each of the New England, West North Central, Mountain, and Pacific divisions. The level for each of eight cities[14] is less than 2 quarts. One of these cities is in the East North Central division, four in the South Atlantic, and one each in the East South Central, West South Central, and Mountain divisions.

The greater milk consumption in the North is probably due to the larger number of dairy cattle and dairy farms than in the South, and probably also to a considerable extent to a larger number of tenant farmers with small incomes in the South. These factors also would seem to provide at least some explanation of why a somewhat higher proportion of whole and evaporated milk is consumed as evaporated

[12] Attention is drawn again to the possibility that omission of specific reports on buttermilk consumption materially affects the averages reported for the southern States.

[13] Average weekly per capita consumption of whole and evaporated milk exceeding 3 quarts was reported for Boston, Burlington, Fargo, Boise, Reno, Portland, Oreg., and Seattle. The level for Minneapolis was exactly 3 quarts.

[14] Average weekly per capita consumption of less than 2 quarts was reported for Gary, Baltimore, Charleston, Richmond, Winston-Salem, Louisville, Oklahoma City, and Pueblo.

in the three southern and two western divisions than in the four divisions of the North and East, as shown in table 3. The averages for the southern divisions range from 15.0 (East South Central) to 20.2 percent (South Atlantic), for the Western are 16.9 (Pacific) and 22.7 percent (Mountain), respectively, and for the North and East the minimum average is 9.3 percent (West North Central) and the maximum 15.9 percent (East North Central).

The proportion of milk consumed in the evaporated form apparently varies appreciably by cities. According to table 11 (appendix C), in 10 cases the average reported was very low, less than 10 percent, and in 3 cases extremely high, 37 to 39 percent.[15] Out of the 59 cities considered, the average was less than 20 percent for 42 cities and 20 percent or higher for 17 cities. Consideration was given to the question of whether or not for the two cities for which data were tabulated separately for Negroes, Baltimore and Charleston, S. C., differences existed on the basis of race. In the case of Baltimore, 22 percent of the milk was consumed as evaporated by whites and 21 percent by Negroes—no material difference. The figures for Charleston, on the other hand, indicate a much higher percentage of evaporated milk for Negroes, 45 percent, as compared with 35 percent for whites.

Distribution of Families by Per Capita Consumption

The facts brought out in the preceding section become even more significant when examined on the basis of distribution of families according to levels of per capita consumption. This further consideration of the data strengthens the implication that the consumption of milk in the representative American home is below levels that would be expected on the basis of its nutritive properties.

Arrangement of the 28,966 families according to weekly per capita consumption of whole and evaporated milk (table 4) discloses that less than 3 quarts per capita was reported for 19,486 families, or for approximately two-thirds (67.3 percent) of the total number. The greatest concentration is at 2.0–2.9 quarts, which limits embrace the per capita consumption of 8,031 families, or 27.7 percent of the total number.

Subject to the qualifications already stated, it may be further noted from table 4 that the per capita consumption for 95.2 percent of the families is less than 5.0 quarts, which quantity is the minimum specified for the "adequate diet at minimum cost"; and that the per capita consumption for 98.6 percent of the families is 5.9 quarts or less, 5.9 quarts being the quantity specified for both the "adequate diet at moderate cost" and the "liberal diet."

[15] See table 12 (appendix C) for the proportion of milk consumed as evaporated, classified according to geographic division and the consumption of whole and evaporated combined.

TABLE 4.—*Distribution of 28,966 families by per capita consumption of whole and evaporated milk*

Weekly per capita consumption of whole and evaporated milk (quarts)	Families	Proportion of total families	Weekly per capita consumption			Ratio of evaporated milk to whole and evaporated milk
			Whole and evaporated milk	Whole milk	Evaporated milk	
		Percent	*Quarts*	*Quarts*	*Quarts*	*Percent*
0–0.9	4,126	14.24	0.50	0.22	0.28	55.5
1.0–1.9	7,329	25.30	1.48	1.10	.38	25.8
2.0–2.9	8,031	27.73	2.42	2.05	.37	15.6
3.0–3.9	5,380	18.57	3.39	2.97	.42	12.3
4.0–4.9	2,702	9.33	4.33	3.90	.43	9.9
5.0–5.9	981	3.39	5.34	4.89	.45	8.8
6.0–6.9	212	.73	6.30	5.52	.78	12.4
7.0–7.9	158	.54	7.17	6.77	.40	5.7
8.0–8.9	19	.07	8.41	6.58	1.83	21.8
9.0–9.9	19	.07	9.37	7.93	1.44	15.4
10.0 and above	9	.03	12.09	10.06	2.03	16.8
All families	28,966	100.00	2.44	2.05	.39	15.8

The distribution of families by classes of per capita consumption of whole and evaporated milk is shown by geographic divisions in table 13 (appendix C). The character of the distribution is in general similar throughout the nine divisions. The largest proportion of families consuming less than 3 quarts per capita weekly is in the cities of the South Atlantic States, where almost 80 percent of all reporting families fall below this level. Cities of the East South Central States contain almost as large a proportion of families in the same category. Omission of skim milk and buttermilk from the reports, of course, may be in part responsible for the disappointing situation disclosed by table 13. It is nevertheless noteworthy that even for the New England, West North Central, and Pacific divisions approximately 60 percent of the reporting families are below 3 quarts per person, and 94 percent of them are below 5 quarts weekly per capita consumption.

The apparent deficiency in consumption of milk by such large proportions of these families becomes still more significant when the consumption of quantities of whole milk and evaporated milk are separately considered. The 4,126 families who reported the consumption of less than 1 quart per person per week (table 4), including 529 families who reported that they purchased no milk, consumed more than half of what milk they did have in the form of evaporated milk. Families at each higher level of milk consumption tend to consume a lower proportion of the total milk in evaporated form. In the upper levels, however, there is a recurrence of the large evaporated milk consumption, which may perhaps be explained by a smaller number of children in those families and a greater propor-

tionate use of evaporated milk as a substitute for cream. The quantity per person as well as the proportion consumed in the form of evaporated milk in these latter families is much greater than that reported by families in the lower-consumption classes.

The same tendency appears for each of the nine divisions, even though, as previously recorded (table 3), the averages for the proportions of milk consumed in the evaporated form vary from 9.3 percent

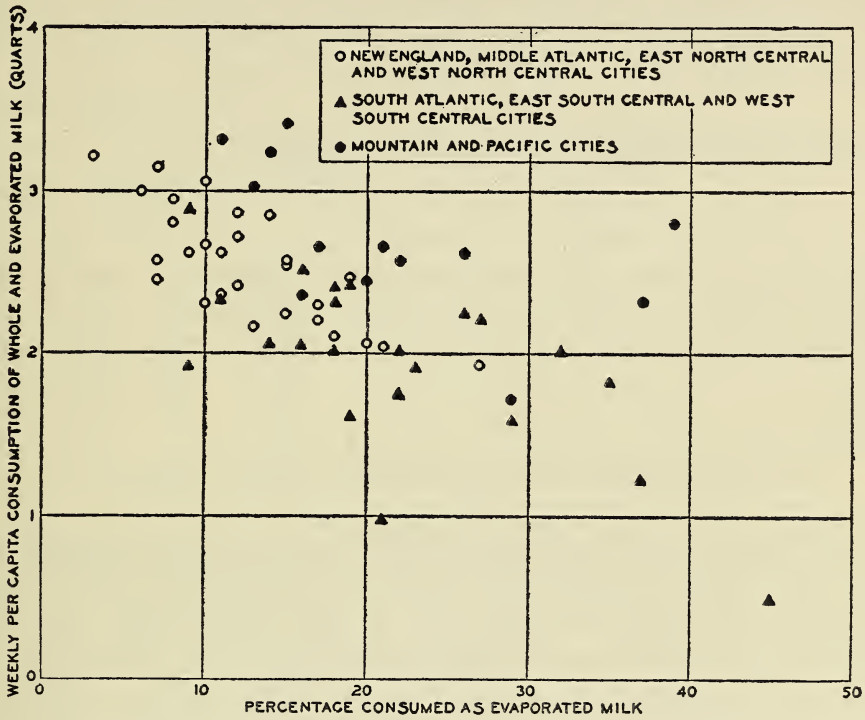

FIGURE 1.—An inverse relationship between the weekly per capita consumption of whole and evaporated milk and the proportion consumed as evaporated milk is indicated by the averages for 59 cities (28,966 families) plotted in the diagram. High percentages of evaporated milk, in general, are associated with small total consumption and low percentages with large total consumption. The degree of correlation varies according to the region.

for the West North Central division to 22.7 percent for the Mountain division. With respect to the former division, families consuming less than 1 quart per person per week report 56 percent in evaporated form, whereas those consuming over 6 quarts per person per week consume only 5 percent of the total as evaporated milk. In the case of the Mountain division, evaporated milk consumption ranges from 74 percent for families with lowest total consumption to 16 percent for those consuming more than 6 quarts per person per week. The typical inverse relation of the consumption of whole and evaporated milk combined to evaporated milk alone is apparent for each geographic division.

Average Size of Family and Milk Consumption

One of the most interesting questions raised by the survey is the nature of the relationship between per capita consumption of milk and size of family. Ground for examining the intercorrelation of these two factors in a preliminary way is provided by table 5, which is based on the entire sample of 28,966 families.

TABLE 5.—*Average size of family, number of children and age of children, as reported for 28,966 families, classified according to weekly per capita consumption of whole and evaporated milk*

Weekly per capita consumption of whole and evaporated milk (quarts)	Average number of persons per family	Average number of children in family		
		Under 5 years of age	5 to 16 years of age	Total
0–0.9	6.42	0.59	2.83	3.43
1.0–1.9	5.98	.45	2.50	2.95
2.0–2.9	5.23	.38	2.13	2.51
3.0–3.9	4.80	.35	1.94	2.29
4.0–4.9	4.56	.31	1.92	2.23
5.0–5.9	4.34	.28	1.86	2.14
6.0–6.9	4.21	.25	1.78	2.03
7.0–7.9	3.68	.11	1.64	1.75
8.0–8.9	4.37	.26	1.74	2.00
9.0–9.9	4.11	.16	1.79	1.95
10.0 and above	3.67	.11	1.22	1.33
All families	5.40	.41	2.25	2.66

It is apparent that with each increase in the per capita consumption level the average number of persons [16] in the families of each class decreases, beginning with the class of least consumption and continuing up to the level of 8 quarts per person per week. At that point a break occurs, which however should not be construed as impairing the relationship as it may have arisen merely by chance, since the number of families reported for each of the three classes above 7.9 quarts is very small.

Since the great majority of these 28,966 families contain 1 or more children (owing to the basis of selection), it follows that the number of children per family parallels the total number of persons per family through these 11 consumption classes. The families with least consumption per capita are the families with the largest number of children. Moreover, the proportion of children below school age is greatest in the families with low milk consumption per person.

[16] The average sizes of families stated in table 5 correspond to the numbers of families in table 4. Owing to the basis of sorting, table 5 shows the average size of family associated with each designated level of per capita milk consumption but should not be interpreted as indicating the per capita consumption for families of a given size, which is a distinct proposition. See table 7 covering the income subgroup of 9,728 families.

Similar trends are observed for all but a few of the 59 cities. The figures for each city, based on the reports of 19,427 families (income group) are given in table 14 (appendix C). The consistent repetition of the relationship suggests that the apparent correlation between size of family and per capita milk consumption is not to be accounted for by race, nationality, or climate. This interpretation seems justified particularly on the ground that among the 59 cities there is little uniformity with respect to any of the last 3 factors yet the relationship in question nevertheless persists practically throughout.

It should be observed that although table 5 and table 14 both classify size of family by per capita milk consumption the more statistically correct procedure is to classify per capita milk consumption by size of family. The latter scheme is adopted in table 7 for the income subgroup of 9,728 families. Table 7 brings outs specifically the indication that the greater the number of children in the family the less is the per capita milk consumption. The underlying cause of this situation presumably is attributable to some supplementing factor (or factors) which is quantitatively related to both milk consumption and size of family.

Average Weekly Income and Milk Consumption

Income naturally would be proposed as the major factor explaining the inverse variation of per capita milk consumption with average size of family. Large families are especially prevalent among the low wage-earning classes of the population. The per capita income for such families consequently is small. Thus it would be anticipated that the average person within this category consumes less milk than one who belongs to either the medium or high wage-earning class.

The statistics collected in the present survey confirm the expectation that average income of the family increases with the per capita consumption of milk. In table 6 an average weekly income [17] of $13.21 for the family, or $2.04 for one person, is shown to be associated with a weekly per capita consumption of less than 1 quart. Proceeding to a higher level of per capita consumption, for example, to the class 7.0–7.9 quarts, the corresponding income is $34.36 for the family, or $9.30 for one person. With only minor irregularities in trend, as consumption is greater income is also, subject only to exceptions at the two highest consumption levels which are probably accounted for by the smallness of the samples at these levels. The effect of income upon milk consumption is more accurately shown for the subgroup of 9,728 families in table 8.

[17] The 19,427 families that reported weekly income as well as milk consumption and number in family are classified by weekly per capita consumption in table 6. It may be observed that the average numbers of persons per family are closely similar in amount and trend to those for the 28,966 families.

TABLE 6.—*Income, size and food expenditures of 19,427 families, distributed by amount of milk consumption*

Weekly per capita consumption of whole and evaporated milk (quarts)	Families	Average number of persons in family	Average weekly income of—		Average weekly expenditure for food for family	Ratio of food expenditure to income
			Family	1 person		
						Percent
0–0.9	2,587	6.47	$13.21	$2.04	$7.29	55.2
1.0–1.9	5,044	5.99	19.87	3.32	9.37	47.2
2.0–2.9	5,452	5.18	25.50	4.93	10.07	39.5
3.0–3.9	3,623	4.75	29.56	6.23	10.80	36.5
4.0–4.9	1,808	4.63	32.76	7.08	11.27	34.4
5.0–5.9	646	4.26	32.66	7.66	11.23	34.4
6.0–6.9	134	4.18	31.70	7.58	10.62	33.5
7.0–7.9	102	3.70	34.36	9.30	11.01	32.0
8.0–8.9	13	4.46	42.23	9.47	13.12	31.1
9.0–9.9	13	3.85	36.85	9.58	10.46	28.4
10.0 and above	5	3.20	26.00	8.13	9.90	38.1
Total	19,427					
Average		5.38	24.18	4.49	9.81	40.6

A similar trend occurs with respect to the average weekly amounts expended for food (table 6), but the increase in this item as milk consumption increases is not so great as the increase in total income. As a result the percentage of income spent for food decreases with increased incomes. This drop in the measure of the burden of food expenditure is very pronounced. Thus when the per capita consumption is less than 1 quart the outlay for food is 55 percent of the family income and with per capita consumption of 7.0–7.9 quarts 32 percent of the income is spent for food.

The type of relationship indicated by table 6 is apparent almost without exception for each of the 59 cities included in the survey, as is evident in table 15 (appendix C). Therefore, its existence could not be ascribed primarily to variations of race, nationality, or climate, granted that these factors may have been related to per capita consumption in some degree indeterminable from the reported data. The uniformity with which it is repeated provides further intimation that deficient per capita milk consumption is chiefly attributable to the limitations on purchases of the commodity induced by small per capita incomes, mostly of large-sized families.

These results are also suggestive from another standpoint. A widespread belief exists that the demand for milk characteristically is inelastic and that, consequently, lowering the price would not result in a proportionate increase in consumption. It would be going too far to say that the relationships demonstrated between per capita income and per capita consumption of milk tend to vitiate these accepted views; rather, these relationships enable us to judge inelasticity in the case of milk from a broader viewpoint. The demand for

the product is evidently influenced by the size of family income, and to the extent that higher milk prices contribute to higher food prices generally they have the result of reducing the purchasing power of family income and with it the quantities of food consumed.

Consumption, Size of Family, and Income in Families with Two Adults [18]

More precise analysis of the foregoing relationships was made with the 9,728 families that contained just 2 adults and from no children up to the maximum reported, 10 children. While consideration of this group does not enable us to distinguish between the amount of milk consumed by adults and that consumed by the children, it provides some means of measuring the extent to which children are subjected to a deficiency of milk in their diets. The data pertinent to the 9,728 families are given in table 7.

TABLE 7.—*Income and milk consumption of 9,728 families with 2 adults each, by number of children*

Children in family	Families	Average weekly income of family	Weekly consumption of whole and evaporated milk per family	Weekly per capita consumption			
				Whole and evaporated milk	Whole milk	Evaporated milk	Ratio of evaporated milk to whole and evaporated milk
			Quarts	*Quarts*	*Quarts*	*Quart*	*Percent*
0	46	$26.49	5.53	2.77	2.22	0.55	19.8
1	2,130	25.59	9.18	3.06	2.58	.48	15.5
2	3,164	25.35	11.73	2.93	2.55	.38	13.0
3	2,251	23.39	13.06	2.61	2.23	.38	14.5
4	1,058	20.67	13.73	2.29	1.90	.39	16.9
5	559	18.98	13.54	1.93	1.57	.36	18.7
6	315	16.85	12.84	1.60	1.26	.34	21.4
7	129	18.46	13.46	1.50	1.15	.35	23.2
8	50	17.35	14.60	1.46	1.11	.35	24.2
9	16	16.89	16.29	1.48	1.12	.36	24.0
10	10	23.03	14.64	1.22	1.09	.13	10.7
Total	9,728						
Average		23.66	11.86	2.68	2.29	.39	14.9

Average weekly per capita consumption of whole and evaporated milk falls below 3 quarts per capita for all groups with two or more children in addition to the two adults. For all groups with five or more children it averages less than 2 quarts per capita. As was

[18] All tables hitherto, involving milk consumption and either income or size of family, deal with gross relationships. Thus, although apparently the lower the per capita income or the greater the size of family the less is the per capita consumption of milk, just how much of the variation in the latter is due to the factor of income and how much to unidentified factors associated with size of family is not demonstrated. Tables 9 and 10 are carried a step further, and show for families of different size the variation of total family consumption and per capita consumption respectively with income.

previously apparent from the relation of average size of family to per capita consumption, the proportion of milk consumed in evaporated form is generally greater in the present instance when the per capita consumption is low than when it is high.

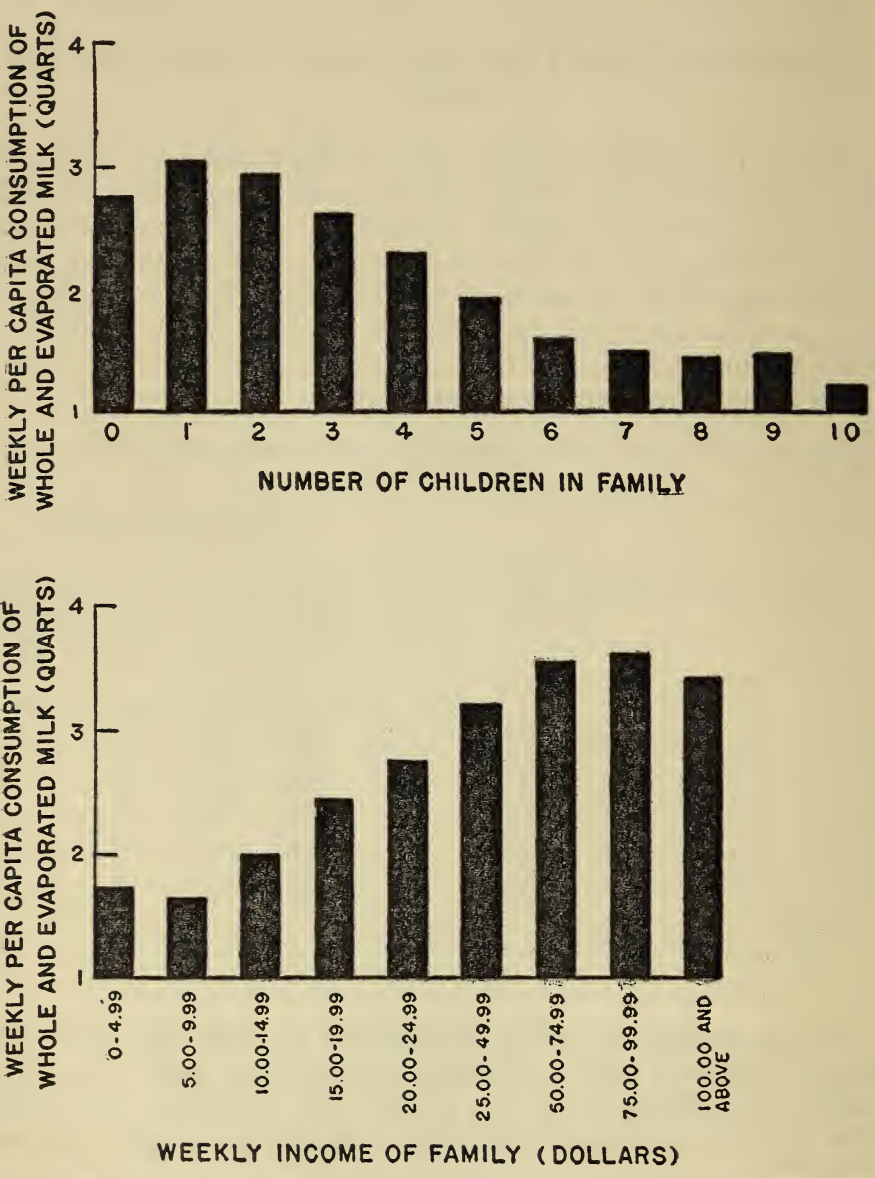

FIGURE 2.—Upper diagram shows for 9,728 families with 2 adults that the greater the number of children in the family the less is the weekly per capita consumption of whole and evaporated milk. This is attributed primarily to the fact that per capita incomes are lower for large families than for small. Lower diagram (9,728 families) shows that the greater the total income of the family the greater is the per capita consumption of milk.

The average consumption of whole and evaporated milk per family tends to increase as the number of children increases, but the rate of increase is not regular and is not great enough to equal the increase in numbers. In short, an increased number of children in the family calls for a greater total consumption of milk, but the increase in that total amount on the average is not large enough to avoid a marked reduction in the amount of milk available to each person. If it be assumed that in response to this pressure of numbers upon the milk

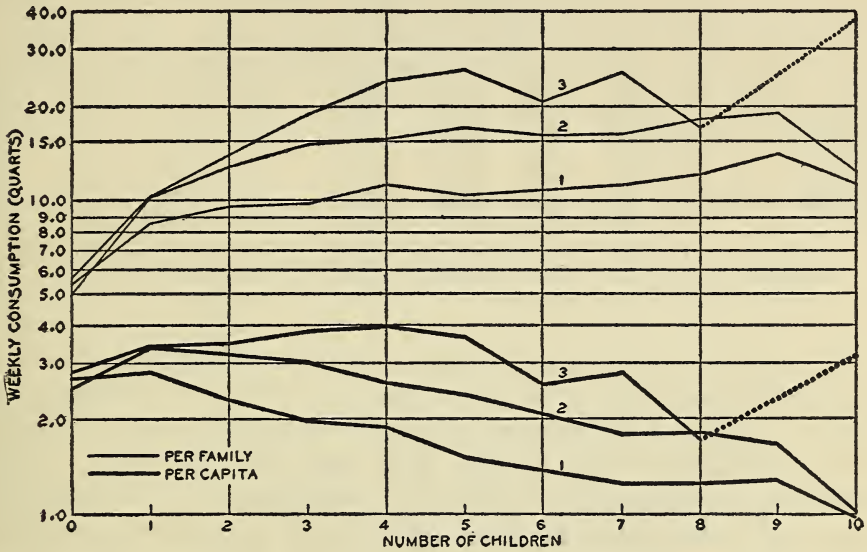

FIGURE 3.—Diagram shows the relations of the weekly per capita and per family consumption of whole and evaporated milk to number of children in 9,728 families (each containing 2 adults), divided according to 3 income groups: (1) Under $20 per week, (2) $20–$49.99 per week, and (3) $50 or more per week. The plotted lines indicate for each income group greater per capita consumption and less per family consumption for families of small size than for those of large size, and greater consumption per capita and per family when income is higher.

supply the two adults wholly deprive themselves of it in the case of the largest families, the average weekly consumption would still be below 2 quarts per child in all groups of seven children and more, and below 3 quarts in all groups of five children and more.

Per capita consumption of whole and evaporated milk for families in the high income levels, according to table 8, is more than double the average for those in the levels of low income. The restricted diet standard of 3 quarts per person weekly is not attained below the $25 to $50 per week income group. The same story of the association of greater per capita consumption with relatively high incomes is also true when whole milk alone is considered. Evaporated milk, on the other hand, is consumed at a greater rate per person in the groups with small income. It accounts for from 20 to 26 percent of

the combined consumption in families whose incomes are less than $20 per week, whereas it averages less than 7 percent in families with incomes of $50 or more per week.

TABLE 8.—*Milk consumed by 9,728 families with 2 adults each by amount of income*

Weekly income of family	Families	Average number of persons in family	Average weekly income per family	Weekly consumption per family of whole and evaporated milk	Weekly per capita consumption[1]			Ratio of evaporated milk to whole and evaporated milk
					Whole and evaporated milk	Whole milk	Evaporated milk	
				Quarts	*Quarts*	*Quarts*	*Quarts*	*Percent*
$0–$4.99	548	4.78	$1.01	7.84	1.73	1.32	0.41	23.7
$5–$9.99	696	4.95	7.16	7.79	1.65	1.22	.43	26.3
$10–$14.99	1,283	4.98	11.84	9.32	2.00	1.55	.45	22.4
$15–$19.99	1,700	4.79	16.34	11.08	2.44	1.95	.49	19.8
$20–$24.99	1,354	4.78	20.94	12.58	2.77	2.36	.41	14.7
$25–$49.99	3,473	4.38	32.16	13.72	3.21	2.86	.35	11.2
$50–$74.99	535	4.24	54.09	15.09	3.56	3.32	.24	6.7
$75–$99.99	87	4.15	77.44	15.44	3.62	3.44	.18	4.9
$100 and above	52	3.95	113.83	14.03	3.43	3.13	.30	8.7
Total	9,728							
Average		4.64	23.66	11.86	2.68	2.29	.39	14.9

The average weekly consumption of milk per family increases as income increases but at a much lower rate than consumption per capita. Family consumption furthermore appears to vary somewhat more consistently with income than with size of family. These tendencies are discernible in table 9. With only few exceptions the relationships heretofore disclosed with respect to weekly consumption per capita are repeated for each size of family (as to income and consumption) and for each income class (as to size of family and consumption). In addition, it is apparent from table 10 that consumption in the case of families of high income appears to decline less severely as the number of children becomes greater than is the case with families at lower income levels.

TABLE 9.—*Milk consumed per family in 9,728 families with 2 adults each, by amount of income and number of children*

Weekly income of family	Weekly milk consumption, all families	Weekly milk consumption of families having number of children specified										
		0	1	2	3	4	5	6	7	8	9	10
	Qt.	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*
$0–$4.99	7.84	------	6.13	7.96	7.49	10.30	6.82	12.63	8.55	14.67	9.90	------
$5–$9.99	7.79	2.70	5.88	7.36	8.16	8.89	9.02	8.18	10.38	18.00	7.70	20.40
$10–$14.99	9.32	5.10	7.42	9.03	9.32	11.88	9.38	9.65	10.37	9.24	27.50	7.20
$15–$19.99	11.08	7.20	8.73	10.84	11.41	12.21	13.74	12.99	12.52	14.00	16.50	------
$20–$24.99	12.58	8.00	9.51	12.14	13.49	14.20	15.45	14.15	16.98	18.67	22.55	10.08
$25–$49.99	13.72	5.25	10.44	13.32	15.88	16.49	17.83	18.63	15.82	18.00	13.93	22.80
$50–$74.99	15.09	5.00	10.53	14.01	18.72	22.82	24.73	15.73	24.75	17.00	------	38.40
$75–$99.99	15.44	------	9.49	14.31	19.28	28.20	35.70	36.00	------	------	------	------
$100 and over	14.03	------	9.44	12.64	20.79	29.04	------	------	27.00	------	------	------
Average	11.86	5.53	9.18	11.73	13.06	13.73	13.54	12.84	13.46	14.60	16.29	14.64

TABLE 10.—*Milk consumed per capita in 9,728 families with 2 adults each, by amount of income and number of children*

Weekly income family	Weekly milk consumption, all families	Weekly milk consumption per capita in families having number of children specified										
		0	1	2	3	4	5	6	7	8	9	10
	Qt.	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*	*Qt.*
$0–$4.99	1.73	------	2.04	1.99	1.50	1.72	0.97	1.58	0.95	1.47	0.90	------
$5–$9.99	1.65	1.35	1.96	1.84	1.63	1.48	1.29	1.02	1.15	1.80	.70	1.70
$10–$14.99	2.00	2.55	2.48	2.26	1.86	1.98	1.34	1.21	1.15	.92	2.50	.60
$15–$19.99	2.44	3.60	2.91	2.71	2.28	2.04	1.96	1.62	1.39	1.40	1.50	------
$20–$24.99	2.77	4.00	3.17	3.04	2.70	2.37	2.21	1.77	1.89	1.87	2.05	.84
$25–$49.99	3.21	2.63	3.48	3.33	3.18	2.75	2.55	2.33	1.76	1.80	1.27	1.90
$50–$74.99	3.56	2.50	3.51	3.50	3.74	3.80	3.53	1.97	2.75	1.70	------	3.20
$75–$99.99	3.62	------	3.16	3.58	3.86	4.70	5.10	4.50	------	------	------	------
$100 and over	3.43	------	3.15	3.16	4.16	4.84	------	------	3.00	------	------	------
Average	2.68	2.77	3.06	2.93	2.61	2.29	1.93	1.60	1.50	1.46	1.48	1.22

Appendix A—List of Women Cooperating in the Survey

I. PLANNING OF SURVEY

Clara D. Noyes, American Nurses Association, 1411 Twenty-ninth Street NW., Washington, D. C.

Alice L. Edwards, American Home Economics Association, Mills Building, Washington, D. C.

Esther P. Lovejoy, M. D., American Women's Hospital Association, 637 Madison Avenue, New York, N. Y.

Julia K. Jaffray, General Federation of Women's Clubs, 1734 N Street NW., Washington, D. C.

Julia West Hamilton, National Association of Colored Women, 114 O Street NW., Washington, D. C.

Adelaide S. Baylor, National Congress of Parents and Teachers, 718 Hurley Wright Building, Washington, D. C.

Mrs. Mark Lansburgh, National Council of Jewish Women, 3111 Idaho Avenue, Washington, D. C.

Charl Williams, National Educational Association, 1201 Sixteenth Street NW., Washington, D. C.

Mrs. Dorothy Dunn, National Federation of Business and Professional Women's Clubs, 1016 Barton Avenue, Livingston Heights, Cherrydale, Va.

Mrs. Louise G. Baldwin, National League of Women Voters, 726 Jackson Place, Washington, D. C.

Elizabeth Christman, National Women's Trade Union League, Machinists' Building, Washington, D. C.

Mrs. Izora Scott, National Woman's Christian Temperance Union, 100 Maryland Avenue NE., Washington, D. C.

Kathryn McHale, American Association of University Women, 1634 I Street NW., Washington, D. C.

Selma Borchard, American Federation of Teachers, 1741 Park Road, Washington, D. C.

Mrs. Daniel L. Poling, Council of Women for Home Missions, 105 East Twenty-second Street, New York, N. Y.

Mrs. Frederick H. Brooks, Girl Scouts of the District of Columbia, Girl Scout House, New York Avenue, Washington, D. C.

Eva Pinkston, National Association of Altrusa Clubs, Washington, D. C.

Gladys W. Jones, National Association of Deans of Women, 1210 Sixteenth Street NW., Washington, D. C.

Elizabeth Eastman, National Board of the Young Women's Christian Association, Washington, D. C.

Anne S. Hooley, National Council of Catholic Women, 4550 Main Street, Kansas City, Mo.

Mrs. John Alexander Jardine, National Federation of Music Clubs, 1112 Third Avenue, Fargo, N. Dak.

Lillie M. Pack, National Federation of Settlements, 147 Avenue B, New York, N. Y.

Mrs. Henry Necarsulmer, National Woman's Conference of American Ethical Union, 225 West Eighty-sixth Street, New York, N. Y.

Mrs. Ellis Meredith, National Women's Democratic Club, 1725 Seventeenth Street NW., Washington, D. C.

Dr. Lena K. Sadler, Medical Women's National Association, 533 Diversey Parkway, Chicago, Ill.

Southern Women's Educational Alliance, 401–402 Grace-American Building, Richmond, Va.

(Mrs. Charlotte Barrell Ware) Mrs. W. Howard Lewis, Women's National Farm and Garden Association, the State House, Boston, Mass., Philadelphia, Pa.

Mrs. Susie E. Sorenson, Women of the Moose, Columbia Chapter No. 368, Washington, D. C.

II. COLLECTION OF DATA

Mrs. Fred Gilman, Albuquerque, N. Mex.
Mrs. R. Murdock Walker, Atlanta, Ga.
Mrs. Harry O. Schloss, Baltimore, Md.
Mrs. Harry Bradley, Birmingham, Ala.
Mrs. Alfred Budge, Boise, Idaho.
Mrs. David A. Wescott, Boston, Mass.
Mrs. F. L. Holmgren, Bridgeport, Conn.
Mrs. James F. Rice, Buffalo, N. Y.
Miss Mae Donnelly, Burlington, Vt.
Mrs. Francis Robbins, Butte, Mont.
Mrs. Robert F. Touhey, Charleston, S. C.
Mrs. Cyrus W. Hall, Sr., Charleston, W. Va.
Mrs. N. C. Nelson, Cheyenne, Wyo.
Mrs. W. E. Fribley, Chicago, Ill.
Mrs. Lowell F. Hobart, Jr., Cincinnati, Ohio.
Mrs. T. N. Umberger, Clarksburg, W. Va.
Mrs. O. E. Wood, Dallas, Tex.
Mrs. Fred W. Lehmann, Jr., Des Moines, Iowa.
Mrs. Malcolm McKinnon, Detroit, Mich.
Mrs. Harvey W. Wiley, District of Columbia.
Mrs. P. T. Boleyn, Fargo, N. Dak.
Mrs. Kenneth Gillis, Fresno, Calif.
Mrs. Frank Sheehan, Gary, Ind.
Mrs. W. A. Sawyer, Globe, Ariz.
Mrs. D. Hayes Murphy, Hartford, Conn.
Mrs. B. F. Coop, Houston, Tex.
Mrs. D. C. Simmons, Jackson, Miss.
Mrs. Herbert Jones, Kansas City, Mo.
Mrs. George W. Dinsmoor, Lawrence, Mass.
Mrs. C. W. Garrison, Little Rock, Ark.
Mrs. Charles McKelvey, Los Angeles, Calif.
Mrs. W. D. Carrithers, Louisville, Ky.
Mrs. Leon D. Goodwin, Manchester, N. H.
Mrs. Willis Campbell. Memphis, Tenn.
Mrs. Harlow J. Hanson. Minneapolis, Minn.
Mrs. Douglas Johnston, New Britain, Conn.
Mrs. Idabel Giefers, New Orleans, La.
Mrs. N. S. Sherman, Oklahoma City, Okla.
Dr. Jennie Callfas, Omaha, Nebr.
Mrs. F. H. Josslyn, Oshkosh, Wis.
Mrs. Celia B. Brogan, Paterson, N. J.
Mrs. W. E. Lingelbach, Philadelphia, Pa.
Miss Helen Grimes, Pittsburgh, Pa.
Mrs. Edward P. Sugar, Pontiac, Mich.
Mrs. John T. Skolfield, Portland, Maine.
Mrs. Nettie R. Bolland, Portland, Oreg.
Mrs. Charles W. Young, Providence, R. I.
Mrs. F. V. Munro, Pueblo, Colo.
Mrs. Vivian Spellier, Reno, Nev.
Mrs. W. Henry Street, Richmond, Va.
Mrs. E. R. Van Cott, Salt Lake City, Utah.
Dr. Eileen Leonard, San Francisco, Calif.
Mrs. Lazard Lippman, San Pedro, Calif.
Mrs. Daniel Ragan, Seattle, Wash.
Mrs. Mary B. Peabody, Sioux Falls, S. Dak.
Dr. Louis M. Leverone, Springfield, Mass.
Mrs. W. E. Padgett, Tampa, Fla.
Mrs. Lewis G. Merrill, Waterbury, Conn.
Mrs. Russell G. Nesbitt, Wheeling, W. Va.
Mrs. R. S. Meeker, Wichita, Kans.
Mrs. Frank Milling, Wilmington, Del.
Miss Rose Tinder, Winston-Salem, N. C.
Mrs. Ed. T. McDonnell, Youngstown, Ohio.

Appendix B

Form no. 4
Agricultural Adjustment Administration
Consumers' counsel

MILK AND YOUR DAILY LIFE

---------- School district.
---------- City.
---------- State.

1. How many members of your household, including boarders, are regularly served with meals in your home? -------.
2. How much did you spend for food last week? ----------.
3. How many members of your household group are—

   (*a*) Under 5 years old? -------.

   (*b*) Five years old but under 16 years? -------.

   (*c*) How many children between 5 and 16 are in school? -------.
4. Please fill out the following:

   (*a*) ------ quarts of milk purchased last week.

   (*b*) ------ pounds of butter purchased last week.

   (*c*) ------ pints of heavy cream, ------ pints of medium cream, and ------ pints of light cream.

   (*d*) How many cans of evaporated or condensed milk did you purchase last week? ------ large cans, ------ small cans.
5. In addition to this you received last week from other sources (not reported above)—

   ------ quarts of fresh milk.

   ------ pounds of butter.

   ------ pounds of evaporated milk.

   ------ pounds of condensed milk.

6. Your family income is about $------ per week.

Form no. 3
Agricultural Adjustment Administration
Consumers' counsel

Date _____

Name of school _____

Name of school district _____

Name of city _____

QUESTIONNAIRE TO SCHOOL PRINCIPALS IN SELECTED SCHOOL DISTRICTS

Kindly fill out the following form with reference to milk distribution in your school:

(1) Do you serve lunches to your pupils? _____

(2) Number of children paying for lunches _____

(3) Number of children receiving free lunches _____

(4) Number of children who receive no lunches _____

(5) The basis for deciding whether a child is to receive lunch free is____

(6) Do you serve milk to your pupils:

With lunches _____

At other times _____

(7) There are _____ pupils in the school, of which _____ are 12 years old or younger.

(8) The children who drink milk at school get an average of _____ glasses (one-half pints) a day.

(9) Do you purchase milk from regular distributors __, producer-distributors __, farmers __, or other agencies __? (*Please check.*)

(10) What do you pay for milk per quart? _____

(11) What does a quart of milk of equivalent grade and quality sell for in the retail stores in your district? _____

(12) The outlay for free milk is met (*please check three times*):

Entirely __, in part __, not at all __—from regular school funds.

Entirely __, in part __, not at all __—from relief funds.

Entirely __, in part __, not at all __—from private sources.

_____
(Name of school principal)

_____
(Address)

APPENDIX C—TABLES

TABLE 11.—*Average size of family, number of children, and consumption of milk for 28,966 families, by geographic division and city*

Geographic division or city	Number of families	Average number of persons in family	Average number of children in family	Weekly per capita consumption of whole and evaporated milk	Ratio of consumption of evaporated milk to consumption of whole and evaporated milk	Proportion of families within which per capita consumption of whole and evaporated milk less than—		
						3.0 quarts	5.0 quarts	5.9 quarts [1]
				Quarts	*Percent*	*Percent*	*Percent*	*Percent*
New England cities	4,462	5.61	2.73	2.66	11	61	94	98
Boston, Mass	434	5.99	3.31	3.06	10	48	89	97
Bridgeport, Conn	515	5.17	2.38	2.86	14	55	95	98
Burlington, Vt	346	5.42	2.69	3.14	7	47	88	97
Hartford, Conn	387	5.92	2.94	2.16	13	78	97	99
Lawrence, Mass	543	5.83	2.64	2.46	7	69	95	98
Manchester, N. H	349	5.11	2.28	2.95	8	53	93	98
New Britain, Conn	461	5.46	2.66	2.54	15	64	97	100
Portland, Maine	593	5.32	2.62	2.87	12	52	95	98
Providence, R. I	376	5.96	2.97	2.30	10	70	96	99
Stratford, Conn	104	6.59	3.38	2.04	21	77	97	99
Waterbury, Conn	354	5.75	2.77	2.42	12	68	96	99
Middle Atlantic cities	1,777	5.74	2.83	2.27	15	74	97	99
Paterson, N. J	687	5.90	2.74	2.20	17	77	98	99
Philadelphia, Pa	594	5.73	2.86	2.37	11	72	96	99
Pittsburgh, Pa	496	5.53	2.92	2.24	15	71	97	99
East North Central	3,984	5.48	2.66	2.38	16	70	97	99
Chicago, Ill	773	5.63	2.67	2.62	11	64	97	100
Cincinnati, Ohio	425	5.45	2.83	2.47	19	64	95	98
Detroit, Mich	691	4.60	1.66	2.71	12	60	95	98
Gary, Ind	728	5.50	2.67	1.93	27	82	98	99
Pontiac, Mich	393	5.88	3.31	2.10	18	81	98	99
Oshkosh, Wis	409	5.67	2.90	2.80	8	59	96	99
Youngstown, Ohio	565	5.92	3.10	2.05	20	77	98	99
West North Central	3,642	5.18	2.59	2.71	10	60	95	99
Des Moines, Iowa	539	5.50	2.96	2.29	17	73	98	100
Fargo, N. Dak	439	5.33	2.80	3.21	3	43	91	98
Kansas City, Mo	649	5.30	2.63	2.56	15	68	96	99
Minneapolis, Minn	753	4.96	2.33	3.00	6	49	93	98
Omaha, Nebr	372	4.80	2.17	2.67	10	64	94	98
Sioux Falls, S. Dak	523	5.23	2.66	2.57	7	65	96	99
Wichita, Kans	367	5.05	2.56	2.62	9	62	94	98
South Atlantic cities	4,350	5.68	2.79	1.93	20	80	97	99
Atlanta, Ga	482	5.48	2.76	2.05	18	78	96	99
Baltimore, Md	1,102	5.91	3.13	1.76	22	83	98	99
White	803	5.73	2.96	2.05	22	79	98	99
Negro	299	6.37	3.58	.98	21	94	100	100
Charleston, S. C	363	5.91	2.87	1.23	37	90	99	100
White	198	6.31	2.95	1.84	35	82	98	100
Negro	165	5.44	2.77	0.50	45	98	99	100
Charleston, W. Va	273	5.48	2.68	2.26	26	75	96	99
Clarksburg, W. Va	276	6.07	2.78	2.44	19	69	95	98
Richmond, Va	721	5.61	2.67	1.62	19	90	99	100
Washington, D. C	416	4.99	2.15	2.89	9	53	93	98
Winston-Salem, N. C	429	6.01	2.96	1.59	29	88	99	100
Wheeling, W. Va	288	5.40	2.55	2.33	18	71	97	98

[1] Not more than 5.9 quarts.

TABLE 11.—*Average size of family, number of children, and consumption of milk for 28,966 families, by geographic division and city*—Continued

Geographic division or city	Number of families	Average number of persons in family	Average number of children in family	Weekly per capita consumption of whole and evaporated milk	Ratio of consumption of evaporated milk to consumption of whole and evaporated milk	Proportion of families within which per capita consumption of whole and evaporated milk less than—		
						3.0 quarts	5.0 quarts	5.9 quarts[1]
				Quarts	*Percent*	*Percent*	*Percent*	*Percent*
East South Central	1,822	5.43	2.57	2.04	15	77	97	99
Birmingham, Ala	306	5.31	2.49	2.22	27	74	97	99
Jackson, Miss	387	5.16	2.49	2.06	16	77	96	98
Louisville, Ky	709	5.60	2.68	1.93	9	81	97	99
Memphis, Tenn	420	5.09	2.53	2.07	14	73	96	99
West South Central	2,623	5.28	2.56	2.33	18	71	95	98
Dallas, Tex	678	5.28	2.42	2.35	11	74	96	98
Houston, Tex	770	5.26	2.66	2.41	18	69	94	98
Little Rock, Ark	576	5.02	2.37	2.52	16	64	94	98
New Orleans, La	441	5.75	2.80	2.03	32	79	96	98
Oklahoma City, Okla	158	5.10	2.71	1.93	23	77	97	98
Mountain cities	3,623	5.16	2.63	2.67	22	60	92	97
Albuquerque, N. Mex	480	5.23	2.80	2.36	16	61	90	97
Boise, Idaho	290	4.81	2.27	3.31	11	44	86	97
Butte, Mont	490	5.21	2.45	2.80	39	62	91	96
Cheyenne, Wyo	488	5.22	2.75	2.57	22	64	94	98
Globe, Ariz	271	5.45	2.85	2.32	37	70	94	97
Pueblo, Colo	493	5.63	2.98	1.71	29	85	98	100
Reno, Nev	743	4.62	2.24	3.42	15	40	86	95
Salt Lake City, Utah	431	5.40	2.86	2.61	26	64	94	98
Pacific cities	2,619	5.06	2.55	2.75	17	59	94	98
Fresno, Calif	435	5.30	2.59	2.65	21	63	92	98
Los Angeles, Calif	688	5.58	3.06	2.45	20	69	97	99
Portland, Oreg	421	4.62	2.21	3.03	13	50	92	97
San Francisco, Calif	679	5.09	2.50	2.66	17	60	96	98
Seattle, Wash	396	4.36	2.05	3.24	14	43	90	97
Total	28,966							
Average		5.40	2.66	2.44	16	67	95	99

[1] Not more than 5.9 quarts.

TABLE 12.—*Proportions of evaporated milk consumed within geographic divisions, by total per capita milk consumption*

Weekly per capita consumption of whole and evaporated milk (quarts)	Ratio of evaporated milk to whole and evaporated milk for—								
	West North Central cities	New England cities	East North Central cities	Middle Atlantic cities	Pacific cities	Mountain cities	West South Central cities	East South Central cities	South Atlantic cities
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
0–0.9	56.1	39.1	54.2	42.5	51.8	74.4	64.4	50.7	56.0
1.0–1.9	20.8	20.2	23.0	20.2	25.9	41.7	30.0	21.7	28.1
2.0–2.9	9.9	12.0	15.6	13.5	17.4	25.0	17.1	12.7	17.9
3.0–3.9	6.6	8.9	12.7	11.6	15.8	19.0	13.9	11.5	13.6
4.0–4.9	4.6	7.2	11.3	9.4	12.8	14.8	10.3	6.3	10.9
5.0–5.9	4.0	5.4	9.2	6.3	11.6	12.6	6.9	5.3	11.5
6.0 and over	5.0	8.0	7.9	15.2	12.3	15.7	10.9	6.8	10.2
All families	9.3	11.1	15.9	14.3	16.9	22.7	18.2	15.0	20.2

TABLE 13.—*Geographic distribution of 28,966 families, by amount of milk consumed*

Weekly per capita consumption of whole and evaporated milk (quarts)	West North Central	New England	East North Central	Middle Atlantic	Pacific	Mountain	West South Central	East South Central	South Atlantic
0–0.9	268	362	483	239	189	567	425	427	1,166
1.0–1.9	768	1,099	1,098	508	578	763	740	527	1,248
2.0–2.9	1,161	1,248	1,198	564	769	886	702	451	1,052
3.0–3.9	828	978	760	307	633	679	416	254	525
4.0–4.9	425	517	318	106	294	478	22	104	248
5.0–5.9	143	184	90	43	120	209	81	37	74
6.0–6.9	24	46	20	5	18	46	21	12	20
7.0–7.9	23	20	14	5	15	42	21	7	11
8.0–8.9	2	4	1	0	1	4	2	1	4
9.0–9.9	0	3	1	0	2	9	1	2	1
10.0 and above	0	1	1	0	0	3	2	0	2
NUMBER OF FAMILIES CONSUMING NOT MORE THAN UPPER LIMIT OF SPECIFIED CLASS									
0–0.9	268	362	483	239	189	567	425	427	1,166
1.0–1.9	1,036	1,461	1,581	747	767	1,330	1,165	954	2,414
2.0–2.9	2,197	2,709	2,779	1,311	1,536	2,216	1,867	1,405	3,466
3.0–3.9	3,025	3,687	3,539	1,618	2,169	2,895	2,283	1,659	3,991
4.0–4.9	3,450	4,204	3,857	1,724	2,463	3,373	2,495	1,763	4,239
5.0–5.9	3,593	4,388	3,947	1,767	2,583	3,582	2,576	1,800	4,313
6.0–6.9	3,617	4,434	3,967	1,772	2,601	3,628	2,597	1,812	4,333
7.0–7.9	3,640	4,454	3,981	1,777	2,616	3,670	2,618	1,819	4,344
8.0–8.9	3,642	4,458	3,982	1,777	2,617	3,674	2,620	1,820	4,348
9.0–9.9	3,642	4,461	3,983	1,777	2,619	3,683	2,621	1,822	4,349
10.0 and above	3,642	4,462	3,984	1,777	2,619	3,686	2,623	1,822	4,351
PERCENTAGE OF TOTAL FAMILIES CONSUMING NOT MORE THAN UPPER LIMIT OF SPECIFIED CLASS									
0–0.9	7.4	8.1	12.1	13.4	7.2	15.4	16.2	23.4	26.8
1.0–1.9	28.4	32.7	39.7	42.0	29.3	36.1	44.4	52.4	55.5
2.0–2.9	60.3	60.7	69.8	73.8	58.6	60.1	71.2	77.1	79.7
3.0–3.9	83.1	82.6	88.8	91.0	82.8	78.5	87.0	91.0	91.7
4.0–4.9	94.7	94.2	96.8	97.0	94.0	91.5	95.1	96.8	97.4
5.0–5.9	98.6	98.3	99.1	99.4	98.6	97.2	98.2	98.8	99.1
6.0–6.9	99.3	99.4	99.6	99.7	99.3	98.4	99.0	99.4	99.6
7.0–7.9	100.0	99.8	99.9	100.0	99.9	99.6	99.8	99.8	99.8
8.0–8.9	100.0	99.9	100.0	100.0	99.9	99.7	99.9	99.9	99.9
9.0–9.9	100.0	100.0	100.0	100.0	100.0	99.9	99.9	100.0	100.0
10.0 and above	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 14.—*Average size of family and per capita milk consumption for 19,427 families, by geographic division and city*

Geographic division or city	Average size of family associated with specified limits of weekly per capita consumption of whole and evaporated milk												
	0 quart	0.1–0.4 quart	0.5–0.9 quart	1.0–1.9 quarts	2.0–2.9 quarts	3.0–3.9 quarts	4.0–4.9 quarts	5.0–5.9 quarts	6.0–6.9 quarts	7.0–7.9 quarts	8.0–8.9 quarts	9.0–9.9 quarts	10.0 quarts and above	Average [1]
	Persons	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*
New England cities	5.93	6.91	7.44	6.36	5.45	5.11	4.83	4.45	4.04	4.00	3.33	4.67	3.00	5.65
Boston, Mass	9.50	7.67	6.88	6.94	6.24	5.34	5.36	4.42	4.17	5.00	----	5.50	----	5.85
Bridgeport, Conn	----	5.33	6.46	5.95	5.06	4.94	4.47	5.28	4.33	3.00	----	----	----	5.14
Burlington, Vt	----	6.40	7.00	7.04	5.28	5.14	5.03	4.38	4.25	4.00	3.50	----	----	5.44
Hartford, Conn	6.00	6.25	7.00	6.73	5.58	4.43	4.00	----	3.00	----	----	----	----	5.93
Lawrence, Mass	6.00	6.00	8.21	6.43	5.48	5.63	5.04	4.67	4.50	4.00	3.00	----	----	5.98
Manchester, N. H	----	----	7.33	5.61	5.00	4.96	4.62	4.25	3.50	----	----	----	----	4.13
New Britain, Conn	7.00	6.43	6.75	6.08	5.18	4.94	4.83	4.55	----	2.00	----	----	----	5.48
Portland, Maine	5.00	8.40	7.24	6.38	5.48	4.85	4.76	4.50	4.50	4.00	----	3.00	----	5.47
Providence, R. I	5.00	7.78	8.20	6.89	5.72	5.28	4.43	5.50	3.00	4.00	----	----	----	6.32
Stratford, Conn	----	5.50	8.11	6.00	6.67	5.54	5.00	----	----	----	----	----	----	6.30
Waterbury, Conn	3.00	6.00	7.95	6.12	5.43	5.57	4.78	4.88	3.00	----	----	----	----	5.88
Middle Atlantic cities	5.35	6.96	6.90	6.25	5.59	4.92	4.75	4.69	4.25	3.75	----	----	----	5.74
Paterson, N. J	6.67	7.10	7.74	6.47	5.41	5.15	4.79	5.14	3.00	3.67	----	----	----	5.95
Philadelphia, Pa	5.88	6.00	7.16	6.02	5.87	4.93	4.52	4.80	4.00	4.00	----	----	----	5.70
Pittsburgh, Pa	4.00	7.40	5.60	5.97	5.49	4.45	5.00	4.00	5.00	----	----	----	----	5.40
East North Central	4.92	6.91	6.89	6.27	5.38	4.81	4.42	4.00	4.00	2.88	6.00	3.00	----	5.56
Chicago, Ill	9.50	5.67	7.45	6.35	5.51	4.98	4.67	4.37	----	3.00	----	----	----	5.59
Cincinnati, Ohio	3.00	7.25	6.09	6.20	5.05	4.67	4.00	3.50	5.50	3.00	----	----	----	5.45
Detroit, Mich	2.50	5.80	6.52	5.60	4.95	4.19	3.76	3.08	3.33	2.33	6.00	----	----	4.80
Gary, Ind	4.91	6.81	6.67	6.04	5.14	4.93	4.42	4.63	4.00	----	----	----	----	5.60
Pontiac, Mich	4.20	----	7.16	6.75	5.40	5.11	4.85	4.25	----	4.00	----	----	----	5.94
Oshkosh, Wis	----	7.00	6.38	6.26	5.96	5.34	4.79	3.67	4.33	----	----	----	----	5.72
Youngstown, Ohio	5.25	7.64	7.67	6.77	5.72	4.96	4.71	4.17	2.00	----	----	3.00	----	6.06
West North Central	6.09	6.74	6.22	5.92	5.02	4.64	4.65	4.21	4.38	3.56	5.00	----	----	5.09
Des Moines, Iowa	6.67	7.00	6.87	6.09	4.89	4.56	5.13	4.38	----	----	----	----	----	5.29
Fargo, N. Dak	----	----	6.00	6.44	5.57	5.16	5.01	4.42	4.80	4.00	----	----	----	5.35
Kansas City, Mo	5.67	8.00	6.19	5.77	4.99	4.95	4.72	4.25	4.00	4.50	----	----	----	5.25
Minneapolis, Minn	5.50	6.33	6.27	5.80	4.94	4.76	4.43	4.17	3.00	3.43	5.00	----	----	4.87
Omaha, Nebr	7.00	6.00	5.25	5.52	4.68	4.64	3.80	3.75	5.67	2.67	----	----	----	4.75
Sioux Falls, S. Dak	6.00	7.00	6.64	5.99	4.98	4.86	4.62	4.33	4.50	----	----	----	----	5.27
Wichita, Kans	----	3.50	4.50	5.98	5.15	2.44	4.55	3.71	----	3.67	----	----	----	4.49

[1] The figures in this column do not agree exactly with the corresponding figures in the second column of table 11, because of differences in the numbers of families involved in the two cases. The present table is based only on families for which incomes were reported, whereas table 11 is based on all families surveyed.

TABLE 14.—*Average size of family and per capita milk consumption for 19,427 families, by geographic division and city*—Continued

Geographic division or city	Average size of family associated with specified limits of weekly per capita consumption of whole and evaporated milk												
	0 quart	0.1–0.4 quart	0.5–0.9 quart	1.0–1.9 quarts	2.0–2.9 quarts	3.0–3.9 quarts	4.0–4.9 quarts	5.0–5.9 quarts	6.0–6.9 quarts	7.0–7.9 quarts	8.0–8.9 quarts	9.0–9.9 quarts	10.0 quarts and above	Average
	Persons	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*
South Atlantic cities	6.03	6.56	6.37	6.06	5.18	4.84	4.70	4.02	4.38	3.43	4.00	----------	3.00	5.69
Atlanta, Ga	6.00	6.40	6.19	5.91	5.10	5.07	5.74	4.28	3.67	3.00	----------	----------	----------	5.50
Baltimore, Md	5.72	7.06	6.40	6.17	5.39	4.64	3.96	3.38	4.00	5.00	5.00	----------	----------	5.90
White	8.20	7.30	6.85	5.98	5.27	4.62	3.95	3.38	4.00	5.00	5.00	----------	----------	5.70
Negro	5.21	6.96	5.83	7.10	7.00	5.00	4.00	----------	----------	----------	----------	----------	----------	6.41
Charleston, S. C	6.10	6.07	5.98	6.28	5.43	5.67	4.67	3.00	----------	----------	----------	----------	----------	5.93
White	8.00	7.50	6.90	6.56	5.54	6.00	4.67	----------	----------	----------	----------	----------	----------	6.34
Negro	6.00	5.67	4.60	3.50	3.50	2.00	----------	3.00	----------	----------	----------	----------	----------	5.40
Charleston, W. Va	4.00	6.78	6.36	5.98	5.35	4.65	4.00	3.75	4.00	----------	----------	----------	3.00	5.52
Clarksburg, W. Va	----------	4.25	8.21	6.51	5.83	5.50	4.64	4.75	6.00	2.00	----------	----------	----------	6.05
Richmond, Va	6.44	6.00	6.16	5.97	4.84	4.64	4.00	2.67	----------	----------	4.00	----------	----------	5.60
Washington, D. C	3.00	7.67	5.82	5.74	4.69	4.61	4.93	4.17	6.00	3.50	3.00	----------	----------	4.97
Winston Salem, N. C	7.00	7.10	6.59	6.01	5.29	4.91	4.71	6.00	4.00	----------	----------	----------	----------	6.03
Wheeling, W. Va	3.00	4.83	6.79	6.12	5.16	4.70	5.00	4.00	4.00	----------	----------	----------	----------	5.54
East South Central	5.74	6.55	6.57	5.51	4.84	4.59	4.72	4.48	4.50	4.17	----------	----------	----------	5.32
Birmingham, Ala	5.00	9.00	6.48	5.63	4.74	4.65	4.82	3.67	----------	3.50	----------	----------	----------	5.27
Jackson, Miss	6.00	6.28	5.89	5.00	4.80	4.21	4.25	5.00	5.67	5.00	----------	----------	----------	4.99
Louisville, Ky	6.19	6.68	6.74	5.68	4.95	4.88	4.88	4.70	----------	4.00	----------	----------	----------	5.61
Memphis, Tenn	4.56	6.09	6.58	5.42	4.74	4.45	4.83	4.14	3.80	----------	----------	----------	----------	5.07
West South Central	5.79	6.31	6.20	5.62	5.11	4.61	4.58	4.24	4.17	3.57	7.00	----------	----------	5.26
Dallas, Tex	5.43	5.78	6.32	5.53	4.99	4.58	4.51	4.56	5.25	2.75	----------	----------	----------	5.15
Houston, Tex	4.00	6.39	5.43	5.66	5.19	4.66	4.88	4.00	3.33	4.00	7.00	----------	----------	5.20
Little Rock, Ark	5.56	6.63	6.49	5.29	4.94	4.43	4.56	4.19	3.00	3.00	----------	----------	----------	5.08
New Orleans, La	6.58	6.07	6.75	5.98	5.47	5.06	4.13	4.33	3.50	4.50	----------	----------	----------	5.75
Oklahoma City, Okla	6.14	6.33	5.44	5.32	4.55	4.00	3.78	7.00	4.50	3.00	----------	----------	----------	4.99
Mountain Cities	6.23	6.63	6.01	5.74	5.02	4.59	4.59	4.37	4.08	3.88	5.33	3.29	3.33	5.11
Albuquerque, N. Mex	6.57	6.83	5.17	5.51	4.78	4.44	4.60	4.00	4.00	4.00	----------	----------	----------	5.17
Boise, Idaho	6.00	----------	9.33	5.17	4.52	4.56	4.66	4.78	5.50	4.50	----------	4.0	3.00	4.75
Butte, Mont	----------	9.33	5.83	5.79	5.48	4.93	4.49	4.47	3.83	3.50	5.00	3.0	4.00	5.31
Cheyenne, Wyo	5.00	6.07	6.67	5.97	5.14	4.90	4.29	4.36	4.33	4.00	----------	3.0	3.00	5.24
Globe, Ariz	6.00	7.67	6.18	6.06	4.82	4.46	4.41	4.15	4.50	3.50	7.00	----------	----------	5.24
Pueblo, Colo	5.86	6.43	6.37	5.81	4.64	4.39	4.79	3.25	----------	----------	----------	----------	----------	5.57
Reno, Nev	7.00	4.50	4.08	4.96	4.96	4.35	4.60	4.41	3.85	3.67	4.00	3.00	----------	4.58
Salt Lake City, Utah	----------	6.33	7.38	6.05	5.23	4.78	5.04	4.75	6.00	5.00	----------	3.00	----------	5.45

Pacific Cities	6.20	6.39	5.92	5.63	4.77	4.46	4.45	4.01	4.17	3.86	2.00	5.00		4.84
Fresno, Calif	6.33	5.00	4.80	5.93	4.91	4.85	4.92	4.16	5.33	4.00				5.17
Los Angeles, Calif		7.50	6.79	5.93	4.82	4.41	4.47	3.79						5.03
Portland, Oreg		5.00	5.33	5.35	4.45	4.28	4.58	4.06	3.75	4.00		6.00		4.57
San Francisco, Calif	6.00	6.11	5.17	5.60	5.01	4.56	4.40	4.18	3.67	4.67	2.00			4.94
Seattle, Wash		10.00	5.00	4.56	4.39	4.28	4.07	3.89	4.00	2.50		4.00		4.30
Average	5.85	6.61	6.52	5.99	5.18	4.75	4.63	4.26	4.18	3.70	4.46	3.85	3.20	5.38

TABLE 15.—*Amount of weekly income and per capita milk consumption for 19,427 families, by geographic division and city*

Geographic division or city	Average weekly income associated with specified limits of weekly per capita consumption of whole and evaporated milk													
	0 quart	0.1–0.4 quart	0.5–0.9 quart	1.0–1.9 quarts	2.0–2.9 quarts	3.0–3.9 quarts	4.0–4.9 quarts	5.0–5.9 quarts	6.0–6.9 quarts	7.0–7.9 quarts	8.0–8.9 quarts	9.0–9.9 quarts	10.0 quarts and above	Average
New England cities	$15.58	$13.40	$17.44	$18.86	$24.74	$30.73	$35.30	$34.05	$35.64	$28.42	$55.00	$53.33	$30.00	$25.37
Boston, Mass	16.00	10.50	16.49	17.50	23.17	32.08	38.12	28.90	45.50	32.10		70.00		27.67
Bridgeport, Conn		7.50	22.97	20.22	23.02	26.22	27.86	23.28	19.33	15.50				23.73
Burlington, Vt		15.60	11.71	18.17	20.91	29.42	38.30	40.87	40.75	22.50	37.50			27.04
Hartford, Conn	22.33	15.25	26.07	18.75	27.00	25.61	34.00		22.00				30.00	23.50
Lawrence, Mass	12.00	19.75	20.57	19.57	25.26	30.83	32.56	25.06	30.00	37.50	50.00			24.25
Manchester, N. H			16.94	20.10	37.47	38.10	43.70	38.12	26.50					32.78
New Britain, Conn	10.00	15.14	15.20	17.67	20.89	31.46	36.42	46.10		30.00				23.85
Portland, Maine	52.00	11.80	16.57	20.02	27.14	32.19	35.27	33.67	40.00	35.00		20.00		27.75
Providence, R. I	7.63	11.78	13.44	18.02	22.22	26.47	30.21	32.50	50.00	25.00				20.31
Stratford, Conn		14.50	11.61	16.45	19.50	23.92	22.00							18.06
Waterbury, Conn	7.00	10.67	18.32	18.65	23.99	35.27	35.94	34.00	25.00					23.49
Middle Atlantic cities	11.04	14.37	15.01	21.67	24.70	25.12	33.18	32.60	28.04	22.50				23.23
Paterson, N. J	25.04	20.55	19.83	24.63	26.25	24.49	33.37	26.00	29.65	23.33				24.94
Philadelphia, Pa	11.04	17.83	13.19	19.30	24.45	27.13	25.63	30.43	15.00	20.00				22.66
Pittsburgh, Pa	4.04	6.11	9.97	16.66	21.74	23.63	42.30	43.86	33.75					20.66
East North Central	8.61	14.56	15.13	20.00	23.60	26.45	26.33	28.15	26.18	39.69	45.00	17.50		22.50
Chicago, Ill	19.00	15.83	17.00	22.52	24.76	26.72	24.66	32.16		21.50				24.34
Cincinnati, Ohio		13.94	13.15	22.69	33.54	32.20	33.47	50.00	15.48	75.00				26.95
Detroit, Mich	10.50	15.90	21.93	26.54	27.78	30.67	31.73	30.75	39.67	20.67	45.00			28.22
Gary, Ind	9.59	12.59	13.78	18.05	23.68	26.19	29.17	25.84	19.50					20.58
Pontiac, Mich	3.56		16.37	17.61	20.97	23.20	21.58	15.00		62.50				19.43
Oshkosh, Wis		13.20	12.38	13.25	13.47	16.37	17.55	12.92	24.67					14.53
Youngstown, Ohio	8.25	19.08	11.54	16.38	20.81	24.92	22.76	30.08	25.00			17.50		19.29

TABLE 15.—*Amount of weekly income and per capita milk consumption for 19,427 families, by geographic division and city*—Continued

Geographic division or city	Average weekly income associated with specified limits of weekly per capita consumption of whole and evaporated milk												
	0 quart	0.1–0.4 quart	0.5–0.9 quart	1.0–1.9 quarts	2.0–2.9 quarts	3.0–3.9 quarts	4.0–4.9 quarts	5.0–5.9 quarts	6.0–6.9 quarts	7.0–7.9 quarts	8.0–8.9 quarts	9.0–9.9 quarts	10.0 quarts and above	Average
West North Central	$15.00	$11.77	$18.21	$19.56	$24.61	$28.14	$30.80	$29.12	$35.48	$40.72	$75.00			$25.17
Des Moines, Iowa	16.33	8.00	18.18	19.68	22.00	28.61	27.60	31.68						23.20
Fargo, N. Dak			30.67	21.05	20.28	26.22	29.11	29.33	28.60	32.67				24.71
Kansas City, Mo	8.50	10.29	14.97	20.52	25.12	26.91	32.48	28.11	26.25	32.50				24.17
Minneapolis, Minn	14.25	20.00	20.26	20.00	27.35	30.86	31.04	32.24	27.28	41.29	75.00			28.34
Omaha, Nebr	13.00	12.00	21.85	18.24	26.26	26.40	33.24	21.12	61.00	51.67				25.59
Sioux Falls, S. Dak	24.50	10.54	17.50	18.56	27.34	29.20	36.04	34.00	40.00					25.67
Wichita, Kans		11.00	9.00	17.80	21.07	25.36	27.25	17.71		42.00				22.02
South Atlantic cities	7.80	10.69	15.71	21.47	29.58	35.76	39.29	41.49	36.81	36.43	44.67		$35.00	23.93
Atlanta, Ga	14.12	11.82	14.33	21.21	29.42	30.93	32.25	38.86	22.00	35.00				25.26
Baltimore, Md	9.06	10.37	13.82	18.70	22.78	29.02	32.65	25.25	47.50	40.00	15.00			18.63
White	12.80	12.38	17.28	19.83	24.23	30.22	33.52	25.25	47.50	40.00	15.00			22.23
Negro	8.28	9.48	9.44	13.26	10.28	7.01	13.50							9.97
Charleston, S. C	3.71	7.18	14.83	22.13	26.02	29.00	37.17	10.00						15.67
White	10.00	14.46	21.32	23.26	27.00	30.73	37.17							24.15
Negro	3.39	5.15	5.08	11.16	9.75	10.00		10.00						4.88
Charleston, W. Va		11.78	13.65	20.72	30.23	43.96	45.00	38.75	51.50				35.00	26.94
Clarksburg, W. Va		17.12	19.04	23.15	32.22	30.31	24.86	43.25	36.00	10.00				27.47
Richmond, Va	12.48	12.49	17.91	23.28	31.11	37.31	45.09	23.42			45.00			24.16
Washington, D. C		16.33	19.10	36.91	46.16	48.72	52.56	57.62	65.00	42.50	74.00			44.89
Winston-Salem, N. C	9.12	10.37	15.60	18.12	28.25	27.48	31.43	17.50	22.50					19.41
Wheeling, W. Va	18.00	8.67	13.59	16.01	19.10	26.52	27.04	39.25	27.50					19.04
East South Central	9.33	10.53	17.26	21.56	29.25	33.66	33.14	29.41	27.12	21.62				24.62
Birmingham, Ala	12.00	12.88	21.30	19.54	28.81	26.40	24.00	35.83		18.62				23.99
Jackson, Miss	11.70	12.52	15.46	21.08	28.57	27.98	29.78	26.40	43.33	22.50				23.73
Louisville, Ky	8.90	10.09	16.68	22.37	26.32	36.26	35.06	28.23		23.75				23.31
Memphis, Tenn	7.92	9.52	16.60	21.79	34.84	38.45	37.85	30.50	17.40					28.06
West South Central	8.77	8.60	12.56	19.25	24.38	28.64	33.47	29.94	24.46	26.96	22.50			22.40
Dallas, Tex	14.36	12.83	16.61	21.73	27.36	30.93	29.49	33.78	24.75	21.75				25.08
Houston, Tex	18.08	9.22	16.06	20.49	23.28	29.50	36.43	27.74	20.00	33.75	22.50			23.94
Little Rock, Ark	2.06	6.18	9.17	18.70	24.98	27.29	32.62	27.09	17.00					21.78
New Orleans, La	10.67	10.10	12.51	16.02	21.71	28.07	39.47	42.17	30.00	30.00				19.61
Oklahoma City, Okla	3.21	5.06	4.87	13.84	20.19	22.05	23.28	16.00	28.75	28.00				14.57

Mountain cities	7.27	7.93	10.64	16.32	24.70	29.57	33.46	34.80	31.52	36.57	19.17	35.57	21.67	23.99
Albuquerque, N. Mex	5.64	6.43	9.56	15.70	28.71	37.29	39.46	40.70	50.50	46.78	----------	----------	----------	23.73
Boise, Idaho	15.00	----------	16.50	21.96	25.95	29.31	32.12	32.33	30.00	30.00	----------	52.50	25.00	28.28
Butte, Mont	----------	20.37	16.59	16.81	19.34	18.35	20.23	23.04	16.28	20.00	7.50	28.00	15.00	18.53
Cheyenne, Wyo	9.00	7.56	14.92	19.90	27.33	33.78	38.34	35.18	36.33	26.00	----------	28.00	25.00	27.11
Globe, Ariz	10.00	2.67	9.18	9.75	19.39	17.98	33.85	29.74	39.00	44.00	25.00	----------	----------	17.42
Pueblo, Colo	6.43	8.83	7.56	12.23	18.08	24.97	25.54	26.00	----------	----------	----------	----------	----------	13.80
Reno, Nev	30.00	11.50	15.15	24.42	27.82	32.00	32.56	35.44	29.45	27.89	25.00	36.50	----------	30.21
Salt Lake City, Utah	----------	9.67	8.39	15.34	26.14	30.28	44.96	50.75	100.00	75.00	----------	15.00	----------	26.12
Pacific cities	17.20	13.15	15.99	21.09	25.83	29.17	31.30	32.22	31.00	45.43	50.00	26.25	----------	26.39
Fresno, Calif	5.33	9.50	20.70	24.39	27.64	28.50	30.70	34.34	50.00	18.00	----------	----------	----------	27.25
Los Angeles, Calif	----------	15.00	13.40	19.46	26.87	26.64	30.38	36.43	----------	----------	----------	----------	----------	25.03
Portland, Oreg	----------	6.50	12.16	15.92	20.63	24.09	30.64	22.88	29.75	45.00	----------	37.50	----------	22.51
San Francisco, Calif	35.00	15.19	21.32	23.46	28.03	30.92	36.69	40.00	25.00	65.00	50.00	----------	----------	28.96
Seattle, Wash	----------	8.00	15.30	17.44	23.64	34.81	27.28	30.24	14.00	30.00	----------	15.00	----------	27.59
Average	9.14	10.78	15.06	19.87	25.50	29.56	32.76	32.66	31.70	34.36	42.23	36.85	26.00	24.18

TABLE 16.—*Persons in 19,427 families* [1] *classified according to per capita milk consumption, by geographic division and city*

Geographic division or city	Total number of families	Total number of persons	Number of persons associated with specified limits of weekly per capita consumption of whole and evaporated milk											
			0 quart	0.1–0.4 quart	0.5–0.9 quart	1.0–1.9 quarts	2.0–2.9 quarts	3.0–3.9 quarts	4.0–4.9 quarts	5.0–5.9 quarts	6.0–6.9 quarts	7.0–7.9 quarts	8.0–8.9 quarts	9.0–9.9 quarts	10.0 quarts and above
New England	3,104	17,526	*Persons* 83	*Persons* 325	*Persons* 1,362	*Persons* 5,359	*Persons* 4,752	*Persons* 3,446	*Persons* 1,537	*Persons* 494	*Persons* 89	*Persons* 52	*Persons* 10	*Persons* 14	*Persons* 3
Boston, Mass	346	2,024	19	46	117	347	543	486	295	115	25	20	----------	11	----------
Bridgeport, Conn	355	1,823	----------	12	84	446	567	459	201	35	13	6	----------	----------	----------
Burlington, Vt	293	1,593	----------	32	49	331	438	401	196	114	17	8	7	----------	----------
Hartford, Conn	166	984	18	25	98	417	307	93	20	----------	3	----------	----------	----------	3
Lawrence, Mass	410	2,451	6	24	197	1,022	608	411	121	42	9	8	3	----------	----------
Manchester, N. H	210	1,078	----------	----------	66	303	315	233	120	34	7	----------	----------	----------	----------
New Britain, Conn	374	2,048	7	45	162	669	549	395	169	50	----------	2	----------	----------	----------
Portland, Maine	438	2,397	5	42	152	549	735	587	257	54	9	4	----------	3	----------
Providence, R. I	206	1,301	25	70	205	482	286	153	62	11	3	4	----------	----------	----------
Stratford, Conn	66	416	----------	11	73	150	100	72	10	----------	----------	----------	----------	----------	----------
Waterbury, Conn	240	1,411	3	18	159	643	304	156	86	39	3	----------	----------	----------	----------

[1] Tabulation covers 19,427 families for which data on income were received.

TABLE 16.—*Persons in 19,427 families*[1] *classified according to per capita milk consumption, by geographic division and city*—Continued

Geographic division or city	Total number of families	Total number of persons	Number of persons associated with specified limits of weekly per capita consumption of whole and evaporated milk												
			0 quart	0.1–0.4 quart	0.5–0.9 quart	1.0–1.9 quarts	2.0–2.9 quarts	3.0–3.9 quarts	4.0–4.9 quarts	5.0–5.9 quarts	6.0–6.9 quarts	7.0–7.9 quarts	8.0–8.9 quarts	9.0–9.9 quarts	10.0 quarts and above
			Persons	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*	*Persons*
Middle Atlantic	1,126	6,468	91	181	731	2,082	2,007	885	323	136	17	15	-------	-------	-------
Paterson, N. J	505	3,006	20	71	356	1,152	849	417	91	36	3	11	-------	-------	-------
Philadelphia, Pa	365	2,079	47	36	179	566	768	281	122	72	4	4	-------	-------	-------
Pittsburgh, Pa	256	1,383	24	74	196	364	390	187	110	28	10	-------	-------	-------	-------
East North Central	2,625	14,582	123	401	1,275	4,819	4,476	2,286	898	228	44	23	6	3	-------
Chicago, Ill	656	3,669	19	17	231	1,092	1,223	662	336	83	-------	6	-------	-------	-------
Cincinnati, Ohio	207	1,128	3	87	140	378	278	154	64	7	11	6	-------	-------	-------
Detroit, Mich	424	2,035	5	29	150	582	599	452	158	37	10	7	6	-------	-------
Gary, Ind	541	3,028	54	177	360	1,088	853	345	106	37	8	-------	-------	-------	-------
Pontiac, Mich	283	1,680	21	-------	136	742	508	189	63	17	-------	4	-------	-------	-------
Oshkosh, Wis	212	1,212	-------	7	51	294	483	251	91	22	13	-------	-------	-------	-------
Youngstown, Ohio	302	1,830	21	84	207	643	543	233	80	25	2	-------	-------	3	-------
West North Central	2,338	11,894	67	155	485	2,908	3,834	2,527	1,345	434	70	64	5	-------	-------
Des Moines, Iowa	303	1,602	20	14	103	499	494	283	154	35	-------	-------	-------	-------	-------
Fargo, N. Dak	348	1,862	-------	-------	18	277	590	480	346	115	24	12	-------	-------	-------
Kansas City, Mo	452	2,374	17	56	130	727	734	436	189	68	8	9	-------	-------	-------
Minneapolis, Minn	487	2,374	11	19	69	371	711	681	350	121	12	24	5	-------	-------
Omaha, Nebr	220	1,045	7	24	63	232	374	195	95	30	17	8	-------	-------	-------
Sioux Falls, S. Dak	340	1,793	12	35	93	533	617	335	120	39	9	-------	-------	-------	-------
Wichita, Kans	188	844	-------	7	9	269	314	117	91	26	-------	11	-------	-------	-------
South Atlantic	2,903	16,526	633	1,897	2,766	5,077	3,634	1,549	677	197	57	24	12	-------	3
Atlanta, Ga	249	1,370	48	64	99	461	403	142	109	30	11	3	-------	-------	-------
Baltimore, Md	660	3,894	166	692	755	1,111	765	269	91	27	8	5	5	-------	-------
White	467	2,663	41	219	452	891	674	254	87	27	8	5	5	-------	-------
Negro	192	1,231	125	473	303	220	91	15	4	-------	-------	-------	-------	-------	-------
Charleston, S. C	234	1,387	250	279	299	270	190	68	28	3	-------	-------	-------	-------	-------
White	131	831	16	75	207	256	183	66	28	-------	-------	-------	-------	-------	-------
Negro	103	556	234	204	92	14	7	2	-------	3	-------	-------	-------	-------	-------
Charleston, W. Va	195	1,077	4	61	159	371	305	107	44	15	8	-------	-------	-------	3
Clarksburg, W. Va	205	1,240	-------	17	156	384	379	220	51	19	12	2	-------	-------	-------
Richmond, Va	638	3,571	103	402	770	1,266	765	209	44	8	-------	-------	4	-------	-------
Washington, D. C	273	1,356	3	69	64	264	319	332	207	75	6	14	3	-------	-------

Wheeling, W. Va	157	870	3	29	95	367	196	94	70	8	8				
Winston-Salem, N. C	292	1,761	56	284	369	583	312	108	33	12	4				
East South Central	1,281	6,817	224	485	1,032	2,094	1,615	845	349	112	36	25			
Louisville, Ky	549	3,082	130	227	600	1,006	654	293	117	47		8			
Memphis, Tenn	305	1,546	41	134	158	412	384	258	111	29	19				
Jackson, Miss	217	1,083	48	88	112	310	283	122	68	25	17	10			
Birmingham, Ala	210	1,106	5	36	162	366	294	172	53	11		7			
West South Central	1,935	10,177	226	505	1,160	3,152	2,595	1,484	719	229	50	50	7		
Dallas, Tex	491	2,531	38	52	196	912	754	339	167	41	21	11			
Houston, Tex	556	2,891	16	179	228	861	752	438	288	88	10	24	7		
Little Rock, Ark	398	2,021	50	126	253	487	469	399	164	67	3	3			
New Orleans, La	381	2,190	79	91	385	759	520	248	66	26	7	9			
Oklahoma City, Okla	109	544	43	57	98	133	100	60	34	7	9	3			
Mountain cities	2,483	12,692	218	656	1,221	2,813	3,022	2,251	1,606	612	147	97	16	23	10
Albuquerque, N. Mex	327	1,689	138	280	248	259	234	222	184	84	8	32			
Boise, Idaho	186	883	6		28	124	226	205	177	86	11	9		8	3
Butte, Mont	324	1,721		28	134	475	532	286	157	67	23	7	5	3	4
Cheyenne, Wyo	355	1,860	20	85	140	442	535	387	180	48	13	4		3	3
Globe, Ariz	164	860	6	23	105	291	183	125	75	29	9	7	7		
Pueblo, Colo	304	1,694	41	193	395	616	246	123	67	13					
Reno, Nev	578	2,649	7	9	53	243	695	640	635	247	77	33	4	6	
Salt Lake City, Utah	245	1,336		38	118	363	371	263	131	38	6	5		3	
Pacific cities	1,632	7,895	31	115	296	1,915	2,293	1,930	913	313	50	27	2	10	
Fresno, Calif	288	1,490	19	10	24	516	432	267	123	79	16	4			
Los Angeles, Calif	385	1,935		30	163	492	559	428	210	53					
Portland, Oreg	286	1,307		10	32	257	365	347	206	65	15	4		6	
San Francisco, Calif	421	2,080	12	55	62	504	656	511	207	46	11	14	2		
Seattle, Wash	252	1,083		10	15	146	281	377	167	70	8	5		4	

[1] Tabulation covers 19,427 families for which data on income were received.

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